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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,890	08/31/2001	Song-Lin Young	SLA1003	4074

7590 03/01/2005  
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EXAMINER

MEHRA, INDER P

ART UNIT	PAPER NUMBER
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2666

DATE MAILED: 03/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

CT

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/944,890	YOUNG, SONG-LIN	
	<b>Examiner</b>	<b>Art Unit</b>	
	Inder P Mehra	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2001.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22, 27-30 and 33-59 is/are rejected.
- 7) ☒ Claim(s) 23-26, 31 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/31/01</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This is in response to Application dated: 8/31/01

#### ***Oath/Declaration***

2. It does not identify the foreign application for patent or inventor's certificate on which priority is claimed pursuant to 37 CFR 1.55, and any foreign application having a filing date before that of the application on which priority is claimed, by specifying the application number, country, day, month and year of its filing.

It does not include the paragraph certifying whether or not "Foreign or Domestic priority are claimed.

Appropriate correction is required.

#### ***Claim Objections***

3. Claims 2-18 are objected to under CFR 1.75 because of the following informalities:
  - a. Claims 2 (line 4) and 3 (line 2) recite "a piconet beacon frequency". This limitation is preceded by the same limitation in claim 1. Change "a" to "the".

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-18, and 33-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a) Claim 1 recites, in line 6, “the piconet”, which has no antecedent basis in the claim. In lines 3 and 4, “piconet beacon frequency” is recited, but “piconet beacon frequency” qualifies as frequency of “piconet beacon”, it does not mean as “piconet. Therefore, it has no antecedent basis in the claim.
- b) Claims 2 and 34 recite the limitation " the plurality of spread spectrum transmission frequencies", in lines 6-7. There is no antecedent basis for this limitation in the claim.
- c) Claims 6 and 38 recite the limitation " the master device frequency hopping sequence" in line 3. There is no antecedent basis for this limitation in the claim.
- d) Claims 7 and 39 recite the limitation "the receiving of the first downlink FHS packet" in lines 2-3. There is no antecedent basis for this limitation in the claim.
- e) Claim 8, 12, 40 and 44 recite the limitation " the inquiring device BD-addr" in line 3. There is no antecedent basis for this limitation in the claim.
- f) Claims 9 and 41 recite the limitation " the master device BD-addr" in line 4. There is no antecedent basis for this limitation in the claim.
- g) Claims 10 and 42 recite the limitation " the receiving of the first uplink FHS packet" in line 2. There is no antecedent basis for this limitation in the claim.
- h) Claims 13 and 45 recite the limitations " the receiving of the second downlink FHS packet" , and “the receipt of the AM-addr" in lines 2-5. There is insufficient antecedent basis for this limitation in the claim.
- i) Claims 14 and 46 recite the limitation "the receiving of the ID packet" in line 3. There is insufficient antecedent basis for this limitation in the claim.

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j) Claims 16 and 48 recites the following limitations:

- " the first downlink FHS packet" in line 3.
- "the slot in line 3;
- "the contention period" in line 7;
- " the second downlink FHS packet" in line 11;

There is no antecedent basis for this limitation in the claim. Similar instances of "Lack of antecedent basis" occur in rest of the claims, which need to be corrected.

Appropriate correction/clarification is required.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 19 and 33-34, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (USPub. No. 2002/0045424) in view of Zyren (US Patent No. 6,377,608).

For claims 1, 19 and 33, Lee discloses "in a network of Bluetooth protocol devices, a method for establishing communications", (refer to fig. 4, a Bluetooth private network structure) comprising:

- broadcasting a piconet beacon frequency, (refer to "sending a beacon signal to each of the Bluetooth devices in local Bluetooth networks to locate the Bluetooth device", refer to abstract, and paragraph 0012;

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- in response to receiving the piconet beacon frequency, establishing communications with the piconet (upon receiving the beacon signal, transmitting from the Bluetooth device a route update packet to the gateway to set a communication path, refer to paragraph 0013).

Lee does not disclose explicitly the following limitation, which is disclosed by Zyren, as follows:

- monitoring to receive the piconet beacon frequency, (A beacon responsive radio control mechanism, installed in each ad hoc radio, monitors the beacon channel for the presence of the wireless beacon, refer to abstract, and monitor whether it is in close proximity to an infrastructure network, refer to col. 2 lines 25-30).

It would have been obvious to a person of ordinary skill in the art at the time of the invention use the capability of “monitoring the beacon frequency” as taught by Zyren. This capability can be implemented by periodically tuning the receive frequency synthesizer of its transceiver to this frequency. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to monitor whether it is in close proximity to an infrastructure network, as taught by Zyren.

For claims 2 and 34, Lee discloses the following limitations:

- “prior to broadcasting the piconet beacon frequency, establishing a piconet with a master device, (A master should be discriminated from a slave in

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Bluetooth, in which the master orders a command and the slave receives and performs the command, refer to paragraph 0008); and

- wherein broadcasting a piconet beacon frequency includes the master device broadcasting at a first predetermined frequency  $f(kB)$ , from the plurality of spread spectrum transmission frequencies, (refer to “sending a beacon signal to each of the Bluetooth devices in local Bluetooth networks to locate the Bluetooth device”, refer to abstract, and paragraph 0012;

8. Claims 3-6 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee** in view of **Zyren**, as above, further, in view of **Haartsen** (US Patent No. 6,754,250)

For claims 3-6 and 35-38, Lee in view of Zyren disclose all the limitations of subject matter with the exception of the following limitations, which are disclosed by Haartsen'250:

- “wherein broadcasting a piconet beacon frequency includes the master device broadcasting its Bluetooth address (BD-addr) and clock (CLK) information.”, **as recited by claims 3 and 35-36**, (refer to “The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence (i.e., the designation of which one of the possible hops in the sequence is the "current" hop”, col. 4 lines 55-60).
- wherein receiving the piconet beacon frequency includes an inquiring device receiving the BD-addr and CLK information of the master device, **as recited**

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by claims 4-5 and 35, 37-38, (the slaves listen to the beacon channel with a very low duty cycle, The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence, refer to col. 9 lines 50-55 and col. 4 lines 55-60),

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of “wherein broadcasting a piconet beacon frequency includes the master device broadcasting its Bluetooth address (BD-addr) and clock (CLK) informati  n.”, as taught by Haartsen. This capability can be implemented by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

9. Claims 7-8, and 39-40, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, as above, in view of Zyren, as above, further, in view of Haartsen (US Patent No. 6,519,460).

For claims 7-8 and 39-40, Lee discloses discloses all the limitations of the subject matter with the exception of the following limitation, which is disclosed by Haartsen, as follows: :

- receiving a first uplink FHS packet from an inquiring device, in response to broadcasting the piconet beacon frequency, as recited by claim 20, (refer to “on exemplary FH link 200, master 120 may alternate transmit and receive



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single packets 121-126 and, -----across time slots 201-212, each having a hop frequency 221-232”, refer to col. 4 lines 35-42.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of “receiving a first uplink FHS packet from an inquiring device” as taught by Haartsen. This capability can be implemented by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

10. Claims 20, 22, and 51-52, is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee, as above**, in view of **Haartsen** (US Patent No. 6,519,460), hereinafter, Haartsen’460.

For claims 20, 22, and 51-52, Lee discloses “in a network of Bluetooth protocol devices, a method----- for establishing communications”, (refer to fig. 4, a Bluetooth private network structure) comprising:

- broadcasting a piconet beacon frequency-----, **as recited by claims 20, 51-52**, (refer to “sending a beacon signal to each of the Bluetooth devices in local Bluetooth networks to locate the Bluetooth device”, refer to abstract, and paragraph 0012;

Lee does not disclose explicitly the following limitation, which is disclosed by Haartsen’460, as follows:

- receiving a first uplink FHS packet from an inquiring device, in response to broadcasting the piconet beacon frequency, **as recited by claims 20, 22, 54** (refer to “on exemplary FH link 200, master 120 may alternate transmit and

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receive single packets 121-126 and, -----across time slots 201-212, each having a hop frequency 221-232”, refer to col. 4 lines 35-42.

- a FHSpacket access code (AC) derived from the master device BD-addr., **as recited by claim 22**, (a FHS packet access code (AC) derived from the master device BD-addr (refer to Access code 310 may be derived, for example, from the identity of master, Haartsen’460 col. 5 lines 15-20);

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of “receiving a first uplink FHS packet from an inquiring device” as taught by Haartsen’460. This capability can be implemented by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

11. Claims 21, and 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee in view of Haartsen’460**), **as above**, in view of **Haartsen** (US Patent No. 6,754,250).

For claims 21 and 53-54, Lee disclose all the limitations of subject matter, with the exception of the following limitations, which are disclosed by Haartsen’460 and Haartsen’250 :

- “wherein broadcasting a piconet beacon frequency includes the master device broadcasting its Bluetooth address (BD-addr) and clock (CLK) informatâon.”, **as recited by claims 21 and 53**, (refer to “The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence (i.e., the designation of which one of the

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possible hops in the sequence is the "current" hop", Haartsen'250 col. 4 lines 55-60).

- (wherein receiving the piconet beacon frequency includes an inquiring device receiving the BD-addr and CLK information of the master device, **as recited by claim 54**, (the slaves listen to the beacon channel with a very low duty cycle (monitoring), The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence, refer to Haartsen'250 col. 9 lines 50-55 and col. 4 lines 55-60);

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of "wherein broadcasting a piconet beacon frequency includes the master device broadcasting its Bluetooth address (BD-addr) and clock (CLK) information.", as taught by Haartsen'250. This capability can be implemented by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

12. Claims 27, 30, 55 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Zyren, as above, further, in view of Haartsen (US Patent No. 6,519,460), hereinafter Haartsen'460 .

For claims 27, 30, 55 and 59, Lee discloses "in a network of Bluetooth protocol devices,

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a method for establishing communications”, (refer to fig. 4, a Bluetooth private network structure) comprising:

- in response to receiving the piconet beacon frequency, establishing communications with the piconet (upon receiving the beacon signal, transmitting from the Bluetooth device a route update packet to the gateway to set a communication path, refer to paragraph 0013).

Lee does not disclose explicitly the following limitation, which is disclosed by **Zyren**, as follows:

- monitoring to receive the piconet beacon frequency, **as recited by claim 27(A)** beacon responsive radio control mechanism, installed in each ad hoc radio, monitors the beacon channel for the presence of the wireless beacon, refer to abstract, and monitor whether it is in close proximity to an infrastructure network, refer to Zyren' col. 2 lines 25-30).

Lee does not disclose explicitly the following limitation, which is disclosed by **Haartsen'460**, as follows:

- receiving a first uplink FHS packet from an inquiring device, in response to broadcasting the piconet beacon frequency, **as recited by claim 27, (refer to** “on exemplary FH link 200, master 120 may alternate transmit and receive single packets 121-126 and, -----across time slots 201-212, each having a hop frequency 221-232”, refer to col. 4 lines 35-42.

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- FHS packet access code (AC) derived from the master device BD-addr (refer to Access code 310 may be derived, for example, from the identity of master, refer to Haartsen'250' col. 5 lines 15-20);

It would have been obvious to a person of ordinary skill in the art at the time of the invention use the capability of “monitoring the beacon frequency” as taught by Zyren and to use the capability of “receiving a first uplink FHS packet from an inquiring device” as taught by Haartsen. These capabilities can be implemented by periodically tuning the receive frequency synthesizer of its transceiver to this frequency and by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to monitor whether it is in close proximity to an infrastructure network, as taught by Zyren and a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

13. Claims 28-29 and 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee** in view of **Zyren, as above**, and **Haartsen**, hereinafter, Haartsen'460, further in view of **Haartsen** (US Patent No. 6,754,250), hereinafter, Haartsen'250.

For claims 28-29 and 56-58, Lee in view of Zyren, Haartsen'460 disclose all the limitations of subject matter, with the exception of the following limitation which is disclosed by Haartsen'250, as follows:

- wherein receiving the piconet beacon frequency includes receiving a master device--- the BD-addr and CLK information in a first downlink FHS packet, **as recited by claims 28 and 57**, (the slaves listen to the beacon channel with

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a very low duty cycle (**monitoring, as recited by claim 56**), (refer to Haartsen'250' col. 9 lines 50-55) The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence, refer to col. 4 lines 55-60).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of "wherein broadcasting a piconet beacon frequency includes the master device broadcasting its Bluetooth address (BD-addr) and clock (CLK) informat  n.", as taught by Haartsen'250. This capability can be implemented by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

#### ***Allowable Subject Matter***

14. Claims 23-26, 31-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

a. Claims 9-18 and 41-50 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Prior Art of Record***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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- Heinonen et al (US Patent No. 6,744,753) discloses local service handover, in which wireless mobile device sends a request for service to be obtained over the Internet.

*Conclusion*

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Inder P Mehra whose telephone number is 571-272-3170. The examiner can normally be reached on Monday through Friday from 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Inder Pal Mehra*  
Inder P Mehra  
Examiner  
Art Unit 2666



EXAMINER  
INDER P MEHRA